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| (71) Applicant (for all designated States except US): LUDWIG INSTITUTE FOR CANCER RESEARCH (GB/GB); St. Mary's Hospital Medical School, Norfolk Place, Pad- dington, London W2 1PG (GB). | | Published Without international search report and to be republished upon receipt of that report. | |

(54) Title: ACTIVIN RECEPTOR-LIKE KINASES, PROTEINS HAVING SERINE THREONINE KINASE DOMAINS AND THEIR USE

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cons..aa      G C V G V      A K      E
RTGFR-11     LPTLVKGRFAVYKAKLQNTSEDTFVAVKI PFDHYASMDKRDIFSDILNKHEDILQF
BACTR-11B    LLEIKAKRGKPCWQKGLAN-----DPAVKI RFLQKQSGMSETEI FSTPGQSDHLLQF
BACTR-11      LLVYKAKRGKPCWQKGLAN-----DPAVKI PFDHYASMDKRDIFSDILNKHEDILQF
def-1        LRVYKSGKPCWQKGLAN-----DPAVKI PFDHYASMDKRDIFSDILNKHEDILQF
subdomains   I          11      111      IV

RTGFR-11     LTAERKTLKCTQMLTAPAKQGLQYLVTVVSVEDLVYVSSLAQGLSLKSDPTF-C
BACTR-11B    LAERKTLKCTQMLTAPAKQGLQYLVTVVSVEDLVYVSSLAQGLSLKSDPTF-C
BACTR-11      LTAERKTLKCTQMLTAPAKQGLQYLVTVVSVEDLVYVSSLAQGLSLKSDPTF-C
def-1        LTAERKTLKCTQMLTAPAKQGLQYLVTVVSVEDLVYVSSLAQGLSLKSDPTF-C
subdomains   V          VI-A

cons..aa      DLK M      DFG
RTGFR-11     -GRDPDIPVQDLESNHLVQDITCCLODGLSLRL...GPFSSVDLANSQGVQVTRKTHP
BACTR-11B    GEGKPSIANDPESKRVLLKSLTAVLADPLGLAVF...EPGKPPD...THGVQVTRKTHP
BACTR-11      DQKPSIANDPESKRVLLKSLTAVLADPLGLAVF...EPGKPPD...THGVQVTRKTHP
def-1        ESKPSIANDPESKRVLLKSLTAVLADPLGLAVF...EPGKPPD...THGVQVTRKTHP
subdomains   VI-B          VII      VIII

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(57) Abstract

A new receptor family has been identified, of activin-like kinases. Novel proteins have activin/TGF- β -type I receptor functionality, and have consequential diagnostic/therapeutic utility. They may have a serine/threonine kinase domain, a DFKSRN or DLKSKN sequence in subdomain VII and/or a GTKRYM sequence in subdomain VIII.